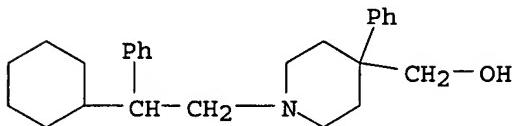


RN 96763-96-1 CAPLUS

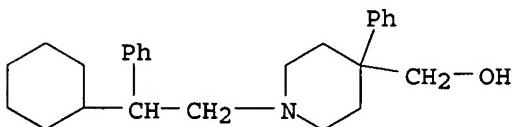
CN 4-Piperidinemethanol, 1-(β-cyclohexylphenethyl)-4-phenyl-, hydrochloride (7CI) (CA INDEX NAME)



● HCl

RN 804442-77-1 CAPLUS

CN 4-Piperidinemethanol, 1-(2-cyclohexyl-2-phenylethyl)-4-phenyl- (9CI) (CA INDEX NAME)



L11 ANSWER 49 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN

GI For diagram(s), see printed CA Issue.

AB The title derivs., of general formula (I), in which R was CH<sub>2</sub>OH, CH(OH)Me, or CH-(OH)Et, A represented a C<sub>1</sub> to C<sub>6</sub> alkylidene radical, and R' was an alkoxy, a substituted-alkoxy, an aryloxy, an aralkoxy an aryl, an heterocyclic, or a tetrahydrofurfuryloxy radical, were prepared by either the reduction of an appropriate derivative of I (R = an alkoxy carbonyl radical, Ac, or EtCO and A and R' as stated) or the alkylation of a piperidine of general formula (I, AR' = H) (II) [R = CH<sub>2</sub>OH, CH(OH)Me, or CH(OH)Et] with an halide of type R'AX (III) (X = I, Br, or Cl and R' and A as stated). Thus, 8 parts I (R = CO<sub>2</sub>Et, A = CH<sub>2</sub>CH<sub>2</sub> R' = 2-tetrahydrofurfuryloxy in 120 parts Et<sub>2</sub>O added to 1 part LiAlH<sub>4</sub> in 120 parts Et<sub>2</sub>O, the suspension boiled 10 min., cooled, and treated with 75 parts Rochelle salt (as 20% aqueous soln,), the mixture extracted with Et<sub>2</sub>O, and the Et<sub>2</sub>O extract evaporated and disd. gave

I (R = CH<sub>2</sub>OH, A = CH<sub>2</sub>CH<sub>2</sub>, R' = 2-tetrahydrofurfuryloxy, b<sub>0.05</sub> 160°, n<sub>20D</sub> 1.5303. Similarly prepared were the following I (R, A, R', and m.p. given): CH<sub>2</sub>OH, CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>, EtO (b<sub>0.4</sub> 155°, n<sub>20D</sub> 1.5180), -, CH<sub>2</sub>OH, CH<sub>2</sub>, 2-tetrahydrofuryl, 78-80°; CH<sub>2</sub>OH, CH<sub>2</sub>CH<sub>2</sub>, morpholino, 130°; CH<sub>2</sub>OH, CH<sub>2</sub>CH<sub>2</sub>, piperidino, 106°; CH<sub>2</sub>OH, CH<sub>2</sub>CH<sub>2</sub>,

PhOCH<sub>2</sub>CH<sub>2</sub>O, 78°; CH<sub>2</sub>OH, CH<sub>2</sub>CH<sub>2</sub>, PhCH<sub>2</sub>O, 82-4°. Na (10 parts) added in two portions to 10 parts I (R = CO<sub>2</sub>Et, A = CH<sub>2</sub>CH<sub>2</sub>, R' = EtO) in 35 parts EtOH, the solution boiled 30 min., cooled, diluted with H<sub>2</sub>O (10 vols.), extracted (exhaustively) with Et<sub>2</sub>O, and the dried Et<sub>2</sub>O exts. distilled yielded I (R = CH<sub>2</sub>OH, A = CH<sub>2</sub>CH<sub>2</sub>, R' = EtO), m. 103-4°. The hydrogenation of an alc. solution of I (R = EtCO, A = CH<sub>2</sub>CH<sub>2</sub>, R' = PhO) in the presence of PtO<sub>2</sub> gave I [R = EtCH(OH), A = CH<sub>2</sub>CH<sub>2</sub>, R' = PhO]; HBr salt, m. 178°. A mixture of 20 parts II [R = EtCH(OH) (IV)], 250 parts pentanol, 5 parts Na<sub>2</sub>CO<sub>3</sub>, and 20 parts IV (R' = 2-tetrahydrofuryl, A = CH<sub>2</sub>, X = Cl), n<sub>20</sub>D 1.4553, was refluxed 48 hrs., the suspension filtered, and the filtrate distilled to give I [R = EtCH(OH), A = CH<sub>2</sub>, R' = 2-tetrahydrofuryl], b<sub>0.05</sub> 170°, n<sub>20</sub>D 1.5375. A similar alkylation method was used to prepare I (R = CH<sub>2</sub>OH, A = CH<sub>2</sub>CH<sub>2</sub>, R' = Ph), m. 108° and I (R = CH<sub>2</sub>OH, A = CH<sub>2</sub>CH<sub>2</sub>, R' = HOCH<sub>2</sub>CH<sub>2</sub>O), b<sub>0.2</sub> 180-90°. IV, b<sub>0.5</sub> 10-5°, was prepared by the PtO<sub>2</sub>-catalyzed reduction of II (R = EtCO), b<sub>0.4</sub> 135°, n<sub>20</sub>D 1.5467, and II (R = CH<sub>2</sub>OH), m. 80°, was obtained by the LiAlH<sub>4</sub> reduction of II (R = CO<sub>2</sub>Et). The I were nonadditive antitussives without pethidine-like analgesic properties.

AN 1962:79391 CAPLUS

DN 56:79391

OREF 56:15490a-f

TI 4-(1-Hydroxyalkyl)-4-phenyl-1-substituted-piperidines

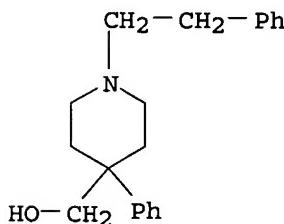
IN Stern, Edward Severin; Watt, Robert L.; Hardy, Denis G.

PA J. F. Macfarlan & Co., Ltd.

DT Patent

LA Unavailable

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 888657		19620131	GB	19580714
	US 3108111		1963	US	
IT	63080-12-6, 4-Piperidinemethanol, 1-phenethyl-4-phenyl-				
	(preparation of)				
RN	63080-12-6 CAPLUS				
CN	4-Piperidinemethanol, 4-phenyl-1-(2-phenylethyl)- (9CI)			(CA INDEX NAME)	

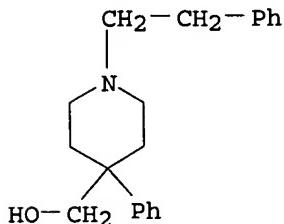


=> d abs bib hitstr 30-39

L11 ANSWER 30 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
GI

with CH<sub>2</sub>N<sub>2</sub>, and evidence for oxide by-products has been obtained. 4-Phenylazacycloheptan-4-ols have been made from the azacycloheptanones, and their esterification and dehydration investigated. The ethanalysis and Thorpe-Ziegler cyclization of N-(2-cyanoethyl)-N-(3-cyanopropyl)benzylamine has been studied. The cyclic product has been shown to have an enaminonitrile structure.

AN 1965:29636 CAPLUS  
 DN 62:29636  
 OREF 62:5256a  
 TI Synthesis and reactions of some azacycloheptan-4-ols  
 AU Casy, A. F.; Birnbaum, H.  
 CS Chelsea Coll. Sci. Technol., London  
 SO Journal of the Chemical Society, Abstracts (1964), (Dec.), 5130-4  
 CODEN: JCSAAZ; ISSN: 0590-9791  
 DT Journal  
 LA English  
 OS CASREACT 62:29636  
 IT 1231-52-3, 4-Piperidinemethanol, 1-phenethyl-4-phenyl-, hydrochloride (preparation of)  
 RN 1231-52-3 CAPLUS  
 CN 4-Piperidinemethanol, 1-phenethyl-4-phenyl-, hydrochloride (7CI, 8CI) (CA INDEX NAME)



● HCl

L11 ANSWER 48 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 AB cf. CA 59, 13935e. A series of N-substituted derivs. of 4-phenyl-4-carbethoxypiperidine (I) was prepared for pharmacological testing. I (46.6 g., b0.5 140°, m. 36-8°) and 42 g. K<sub>2</sub>CO<sub>3</sub> in 250 ml. anhydrous C<sub>6</sub>H<sub>6</sub> treated, under stirring, dropwise with 31 g. BzCH<sub>2</sub>Cl (II) in 200 ml. C<sub>6</sub>H<sub>6</sub> in 45 min. at room temperature, the mixture stirred 2 hrs., refluxed 1 hr., kept overnight at room temperature, and worked up gave 63.2 g. 1-phenacyl-4-phenyl-4-carbethoxypiperidine (III), m. 114° (C<sub>6</sub>H<sub>6</sub>-petr. ether or 60% EtOH); HCl salt m. 175-80° (Me<sub>2</sub>CO-EtOH-Et<sub>2</sub>O). III (15 g.) in 150 ml. anhydrous EtOH, Pd-C (prepared from 3 g. PdCl<sub>2</sub>), and 0.3 g. PdCl<sub>2</sub> hydrogenated under shaking at normal conditions 5 hrs. gave 9.4 g. 1-(2-phenyl-2-hydroxyethyl)-4-phenyl-4-carbethoxypiperidine (IV), m. 128.5° (80° EtOH); HCl salt m. 192° (aqueous EtOH). IV (3 g.), 15 ml. anhydrous C<sub>5</sub>H<sub>5</sub>N, and 15 ml. Ac<sub>2</sub>O kept overnight at room temperature and worked up gave 3.0 g. HCl salt of 1-(2-phenyl-2-acetoxyethyl)-4-phenyl-4-carbethoxypiperidine monohydrate, m. 110-20° and 173-5° (H<sub>2</sub>O). IV (3 g.), 15 ml. anhydrous C<sub>5</sub>H<sub>5</sub>N, and 15 ml. (EtCO)<sub>2</sub>O gave similarly 3.7 g. HCl salt of 1-(2-phenyl-2-

L11 ANSWER 46 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN

GI For diagram(s), see printed CA Issue.

AB The title compds. I, useful as muscle relaxants, were prepared Thus 35 g. AlCl<sub>3</sub> was added to 200 ml. PhOPh, 35 g.  $\gamma$ -chlorobutyryl chloride added, and the solution stirred 1 hr. to give p-Cl(CH<sub>2</sub>)<sub>3</sub>COC<sub>6</sub>H<sub>4</sub>OPh. A mixture of 0.05 mole p-phenoxy- $\beta$ -chloropropionate, 0.05 mole 4-phenyl-1,2,5,6-tetrahydropyridine, 0.05 mole Et<sub>3</sub>N, and 25 ml. HCONMe<sub>2</sub> was heated at 70 for 4 hrs., poured into H<sub>2</sub>O, worked up, and 2-naphthalenesulfonic acid in 200 ml. iso-PrOH added to give 16 g. 1-[2-(p-phenoxybenzoyl)ethyl]-4-phenyl-1,2,5,6-tetrahydropyridine 2-naphthalenesulfonate, m. 190.5-91°, which was converted to the free base (II) and then to the hydrochloride, m. 190-1°, by adding excess alc. HCl. Similarly prepared were 1-[ $\gamma$ -(p-phenoxybenzyl)propyl]-4-phenyl-1,2,5,6-tetrahydropyridine 2-naphthalenesulfonate, m. 202-3.5°; HCl salt, m. 163-65°. A mixture of 0.005 mole II, 0.005 mole NH<sub>2</sub>OH.HCl, and 20 ml EtOH was heated in warm water for 2 hrs. to give II oxime, m. 182-4°. A mixture of 0.01 mole II, 0.05 mole NaBH<sub>4</sub>, and 150 ml. EtOH was refluxed 6 hrs. to give 65% 1-[3-hydroxy-3-(p-phenoxyphenyl)propyl]-4-phenyl-1,2,5,6-tetrahydropyridine-HCl, m. 203-3.5°. Similarly prepared were 3-[N-(4-phenyl-1,2,5,6-tetrahydro-1-pyridyl)]-1-[4-(p-nitrophenoxy)phenyl]-1-propanol-HCl, m. 214-15°; N-[4-hydroxy-4-(p-phenoxyphenyl)butyl]-4-phenyl-1,2,5,6-tetrahydropyridine-HCl, m. 160-1°; 3-piperidino-1-(p-phenoxyphenyl)-1-propanol, m. 79-81°; 4-piperidino-1-(p-phenoxyphenyl)-1-butanol-HCl, m. 153-3.5° (iso-PrOH-heptane); 4-(o-methoxyphenyl-1-piperazinyl)-1-(p-phenoxyphenyl)-1-butanol-HCl, m. 199-201°; 3-[N-(4-phenyl-1,2,5,6-tetrahydro-1-pyridyl)]-1-[4-p-fluorophenoxy]-phenyl]-1-propanol, m. 112-13°. A mixture of 0.05 mole 4-(p-nitrophenoxy)acetophenone, 0.05 mole paraformaldehyde, 0.05 mole 4-phenyl-1,2,5,6-tetrahydropyridine-HCl, and 25 ml. HOAc was stirred at 95° for 2 hrs. The HOAc was evaporated and the residue diluted with acetone to give 11.68 g. 2-[4-(4-nitrophenoxy)benzoyl]ethyl-4-phenyl-1,2,5,6-tetrahydropyridine-HCl, m. 198-9°. Similarly prepared were 1-(o-methoxyphenyl)-4-[2-(p-phenoxybenzoyl)ethyl]piperazine-HCl, m. 173-5°; 2-[4-(p-fluorophenoxy)benzoyl]ethyl-4-phenyl-1,2,5,6-tetrahydropyridine-HCl, m. 192-3° (BuOH). A mixture of 0.005 mole 3-(4-phenyl-1,2,5,6-tetrahydro-1-pyridyl)-1-(p-phenoxyphenyl)-1-propanol, 0.005 mole BuNCO, and 30 ml. toluene was refluxed for 2 hrs., the toluene evaporated, and the residue treated with 0.6 g. fumaric acid (in iso-PrOH) to give 3-(4-phenyl-1,2,5,6-tetrahydro-1-pyridyl)-1-(phenoxyphenyl)-1-propanol N-butylcarbamate fumarate, m. 128-30° (heptane-BuOH). A solution of 0.15 mole piperidine, 0.075 mole p-phenoxy-3-chloropropiophenone, and 30 ml. HCONMe<sub>2</sub> was heated at 70° for 4 hrs. and the product treated with 13 g. 2-naphthalenesulfonic acid (in iso-PrOH) to give 11.5 g.  $\beta$ -(N-piperidino)-p-phenoxypropiophenone 2-naphthalenesulfonate, m. 140-3°. The base, m. 168-71°, was liberated from the salt and then converted into the HCl salt, m. 162-3°. A mixture of 0.075 mole piperidine, 0.075 mole  $\gamma$ -chloro-p-phenoxybutyrophenone, 0.075 mole anhydrous K<sub>2</sub>CO<sub>3</sub>, 0.075 mole NaI, 30 ml. HCONMe<sub>2</sub>, and 6.4 g. piperidine was refluxed 24 hrs. and the product treated with 15 g. C<sub>10</sub>H<sub>7</sub>SO<sub>3</sub>H-2 to give 8.4 g.  $\gamma$ -(N-piperidino)-p-phenoxybutyrophenone-C<sub>10</sub>-H<sub>7</sub>SO<sub>3</sub>H-2. Similarly prepared were 1-[ $\gamma$ -(p-phenoxybenzoyl) propyl]-4-hydroxypiperidine, m. 97.5-8.5° (heptane-iso-PrOH), HCl salt m. 104-6°; 1-[ $\gamma$ -(p-phenoxy)benzoylpropyl]-4-(m-trifluoromethylphenyl)-4-hydroxypiperidine-C<sub>10</sub>H<sub>7</sub>SO<sub>3</sub>H-2, m. 161-3° (iso-PrOH); 1-[ $\gamma$ -(p-phenoxybenzoyl)-4-phenyl-4-

hydroxymethylpiperidine-C<sub>10</sub>H<sub>7</sub>SO<sub>3</sub>H-2, m. 129.5-32°;  
 $\gamma$ -[N-4-(carbethoxy-4-phenylpiperidino)-p-phenoxybutyrophenone]-C<sub>10</sub>-H<sub>7</sub>SO<sub>3</sub>H-2 (number m.p. reported); 1-[ $\gamma$ -(p-phenoxybenzoyl)propyl]-4-(o-methoxyphenyl)piperazine-C<sub>10</sub>H<sub>7</sub>SO<sub>3</sub>H-2, m. 215-17°; HCl salt m. 202-4°. A MeOH solution of 0.004 mole 1-(o-methoxyphenyl)-4-[2-(p-phenoxybenzoyl)ethyl]piperazine was treated with 0.004 mole NaBH<sub>4</sub> in 3 portions over 1.5 hrs. to give 1.35 g. 1-(o-methoxyphenyl)-4-(p-phenoxyphenyl)piperazine-HCl, m. 164.5-5.5°.

AN 1969:87583 CAPLUS

DN 70:87583

TI N-(p-Phenoxybenzoylalkyl)-4-phenyl-1,2,5,6-tetrahydropyridines and the corresponding alcohols and carbamates

IN Biel, John H.; Hopps, Harvey B.

PA Aldrich Chemical Co., Inc.

SO U.S., 11 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3426036	A	19690204	US 1966-570186	19660804
PRAI	US 1966-570186	A	19660804		
IT	22620-52-6P				

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

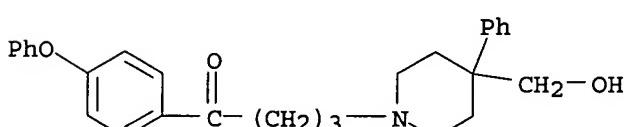
RN 22620-52-6 CAPLUS

CN 2-Naphthalenesulfonic acid, compd. with 4-[4-(hydroxymethyl)-4-phenylpiperidino]-4'-phenoxybutyrophenone (1:1) (8CI) (CA INDEX NAME)

CM 1

CRN 47695-27-2

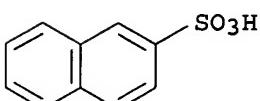
CMF C28 H31 N O3



CM 2

CRN 120-18-3

CMF C10 H8 O3 S



L11 ANSWER 47 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
 AB 4-Piperidones have been ring-expanded to azacycloheptanones by reaction

propionoxyethyl)-4-phenyl-4-carbethoxypiperidine, m. 153-5°  
(Me<sub>2</sub>CO-EtOEt<sub>2</sub>O). I (10 g.) and 3.5 g. anhydrous C<sub>5</sub>H<sub>5</sub>N in 50 ml. anhydrous

C<sub>6</sub>H<sub>6</sub>

treated with 10 g. Ph<sub>2</sub>CHCOCl (V) in 50 ml. C<sub>6</sub>H<sub>6</sub> under stirring in 30 min., and the mixture kept overnight at room temperature and worked up gave 16.3 g. 1-(diphenylacetyl)-4-phenyl-4-carbethoxypiperidine (VI), m. 94-6° (C<sub>6</sub>H<sub>6</sub>-petr. ether). I (10 g.) and 10 g. phenylcyclohexylacetyl chloride (VII) gave similarly 13.5 g. 1-(phenylcyclohexylacetyl)-4-phenyl-4-carbethoxypiperidine (VIII), m. 152-3° (C<sub>6</sub>H<sub>6</sub>-petr. ether). VI (10 g.) reduced with 3 g. LiAlH<sub>4</sub> in 425 ml. anhydrous Et<sub>2</sub>O in 5 hrs., and the mixture refluxed 3 hrs. and worked up gave 8.3 g. 1-(2,2-diphenylethyl)-4-phenyl-4-hydroxymethylpiperidine, m. 106-8° (Et<sub>2</sub>O); HCl salt m. 219-25° (EtOH-Me<sub>2</sub>CO). VIII (11 g.) gave similarly 8.1 g. 1-(2-phenyl-2-cyclohexylethyl)-4-phenyl-4-hydroxymethylpiperidine, m. 105-6° (anhydrous Et<sub>2</sub>O); HCl salt m. 168-72° (Me<sub>2</sub>COEt<sub>2</sub>O). I (15 g.) and 6.2 g. Cl(CH<sub>2</sub>)<sub>2</sub>OH heated 5 hrs. at 100° and worked up gave 13.7 g. 1-(2-hydroxyethyl)-4-phenyl-4-carbethoxypiperidine, b<sub>1</sub>.5 164-74°, m. 70-80°; HCl salt m. 142-4° (EtOH-Et<sub>2</sub>O).

NaNH<sub>2</sub> (9 g.) in 150 ml. anhydrous C<sub>6</sub>H<sub>6</sub> stirred and treated with 12 g. Ph<sub>2</sub>C(OH)Me, the mixture stirred 20 min. at room temperature, treated with 20 g. HCl salt of 1-(2-chloroethyl)-4-phenyl-4-carbethoxypiperidine (m. 215°), refluxed 7 hrs. with stirring, cooled, decomposed with 150 ml. H<sub>2</sub>O, the organic layer evaporated in vacuo, and the glassy residue (27.7 g.) chromatographed on 360 g. neutral Al<sub>2</sub>O<sub>3</sub> gave on elution with CHCl<sub>3</sub> 14 g. 1-[2-(1,1-diphenylethoxy)ethyl]-4-phenyl-4-carbethoxypiperidine, m. 95-6° (C<sub>6</sub>H<sub>6</sub>-petr. ether); picrate m. 162° (anhydrous EtOH); methanesulfonate monohydrate m. 84-5° (C<sub>6</sub>H<sub>6</sub>-Et<sub>2</sub>O-petr. ether). I (23.3 g.), 100 ml. iso-AmOH, 9.3 g. anhydrous K<sub>2</sub>CO<sub>3</sub>, and 30 g. Me<sub>2</sub>N(CH<sub>2</sub>)<sub>3</sub>Cl refluxed 30 hrs. and worked up gave 11.6 g. 1-(3-dimethylaminopropyl)-4-phenyl-4-carbethoxypiperidine, b<sub>1</sub> 190°; di-HCl salt hemihydrate m. 240-1° (EtOH); dimethiodide m. 230-2° (EtOH). I (30 g.) and 50 ml. CH<sub>2</sub>:CHCN kept overnight at room temperature, the mixture treated with

0.5

ml. 50% Et<sub>3</sub>N(CH<sub>2</sub>Ph)OH, heated 3 hrs. in a boiling water bath, evaporated in vacuo, and the residue distilled gave 34 g. 1-(2-cyanoethyl)-4-phenyl-4-carbethoxypiperidine (IX), b<sub>1</sub> 194-8°, m. 51.5° (Et<sub>2</sub>O-petr. ether); HCl salt m. 193° (Me<sub>2</sub>CO-EtOH). IX (8 g.) and 1.75 ml. anhydrous EtOH in 15 ml. anhydrous CHCl<sub>3</sub> cooled, saturated with anhydrous HCl,

and the

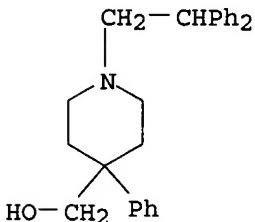
mixture kept in a closed vessel 2 weeks at room temperature and worked up gave

3

g. di-HCl salt of 3-(4-phenyl-4-carbethoxypiperidino)propionamidine, m. 188-90° (MeOH-Et<sub>2</sub>O). MeONa (prepared from 1 g. Na and 10 ml. anhydrous MeOH) treated with 3 g. NH<sub>2</sub>OH.HCl, the mixture stirred 10 min., filtered, the filtrate treated with 5.72 g. IX in 5 ml. MeOH, and the mixture kept overnight at room temperature and worked up gave 3 g. di-HCl salt of 3-(4-phenyl-4-carbethoxypiperidino) propionamidoxime, m. 172-4° (MeOH-Et<sub>2</sub>O). I (30 g.) and 50 ml. CH<sub>2</sub>:CHCO<sub>2</sub>Et kept 4 hrs. at room temperature, the mixture heated 3 hrs. at 100-10°, evaporated in vacuo, and the residue distilled gave 23.5 g. 1-(2-carbethoxyethyl)-4-phenyl-4-carbethoxypiperidine, b<sub>0</sub>.6 184-6°; HCl salt m. 147° (Me<sub>2</sub>CO). I (10.8 g.) in 45 ml. anhydrous Et<sub>2</sub>O stirred, treated with 3.5 g. CH<sub>2</sub>:CHAc in 10 ml. Et<sub>2</sub>O (under reflux), the mixture kept overnight and evaporated, and the residue mixed with petr. ether gave 13.5 g. 1-(3-oxobutyl)-4-phenyl-4-carbethoxypiperidine (X), m. 64.5-5.5° (petr. ether); HCl salt m. 147-50° (MeOH-Et<sub>2</sub>O). X (5.5 g.), 5 g. NH<sub>2</sub>OH.HCl, 50 ml. EtOH, and 5 ml. C<sub>5</sub>H<sub>5</sub>N refluxed 2 hrs. and worked up gave 1-(3-hydroxyiminobutyl)-4-phenyl-4-carbethoxypiperidine, m. 149-52° (EtOH); di-HCl salt m. 129-32° (MeOH-Et<sub>2</sub>O); methiodide m. 167-9° (EtOH-Et<sub>2</sub>O). I

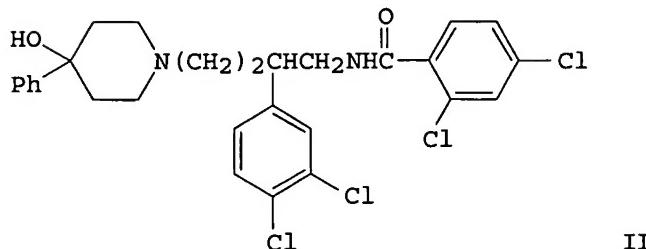
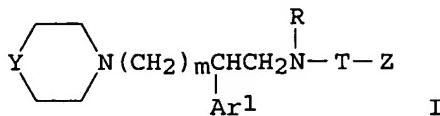
(10 g.) and 5.2 ml. concentrated HCl in 15 ml. H<sub>2</sub>O heated to 75-80°, the solution stirred, treated dropwise in 45 min. with 3.3 g. NaNO<sub>2</sub> in 10 ml. H<sub>2</sub>O, and the mixture stirred 2 hrs. at 75-80°, kept overnight at room temperature, and worked up gave 11.5 g. 1-nitroso-4-phenyl-4-carbethoxypiperidine (XI), m. 43-5° (Et<sub>2</sub>O-petr. ether). XI (9 g.) in 100 ml. 75% AcOH stirred at 60°, treated in 1 hr. with 25 g. Zn, and the mixture stirred 2 hrs. at 60°, cooled, filtered, and the filtrate worked up gave 4.5 g. HCl salt of 1-amino-4-phenyl-4-carbethoxypiperidine, m. 173-7° (EtOH-Et<sub>2</sub>O). The analgesic, antispasmodic, mydriatic, and central depressing activities of the products are tabulated; III is the most active of the series.

AN 1964:30816 CAPLUS  
 DN 60:30816  
 OREF 60:5451f-h,5452a-g  
 TI Synthetic analgesics. V. Synthetic experiments based on 4-phenyl-4-carbethoxypiperidine (norpethidine)  
 AU Protiva, M.; Jilek, J. O.; Pomykacek, J.; Jirkovsky, I.; Vejdelek, Z. J.  
 CS Pharm. Res. Inst., Prague  
 SO Collection of Czechoslovak Chemical Communications (1963), 28, 2627-36  
 CODEN: CCCCAK; ISSN: 0010-0765  
 DT Journal  
 LA Unavailable  
 IT 96072-68-3, 4-Piperidinemethanol, 1-(2,2-diphenylethyl)-4-phenyl-, hydrochloride 96072-69-4, 4-Piperidinemethanol, 1-(2,2-diphenylethyl)-4-phenyl- 96763-96-1, 4-Piperidinemethanol, 1-(β-cyclohexylphenethyl)-4-phenyl-, hydrochloride 804442-77-1, 4-Piperidinemethanol, 1-(β-cyclohexylphenethyl)-4-phenyl- (preparation of)  
 RN 96072-68-3 CAPLUS  
 CN 4-Piperidinemethanol, 1-(2,2-diphenylethyl)-4-phenyl-, hydrochloride (7CI) (CA INDEX NAME)



● HCl

RN 96072-69-4 CAPLUS  
 CN 4-Piperidinemethanol, 1-(2,2-diphenylethyl)-4-phenyl- (7CI) (CA INDEX NAME)



**AB** Title compds. I [Y = Cy-N, Ar(CH<sub>2</sub>)<sub>x</sub>C(X); Cy = (substituted) Ph, cycloalkyl, pyrimidinyl, pyridyl; Ar = (substituted) Ph, pyridyl, thienyl; x = 0, 1; X = OH, alkoxy, hydroxyalkyl, acyloxy, phenacyloxy, CO<sub>2</sub>H, carbalkoxy, cyano, aminoalkyl, (di)(alkyl)amino, alkanoylamino, acyl, etc.; m = 2, 3; Ar' = (substituted) Ph, (benzo)thienyl, naphthyl, (N-alkyl)indolyl; R = H, alkyl; T = CO, CONH, C(S)NH; Z = H, M, OM; M = alkyl, (substituted) phenylalkyl, pyridylalkyl, (substituted) naphthylalkyl, pyridylthioalkyl, styryl, etc.] were prepared for use as antiasthmatics and bronchodilators. For example, N-[2-(3,4-dichlorophenyl)-4-hydroxybutyl]-2,4-dichlorobenzamide (preparation given) was converted to the mesylate ester by MeSO<sub>2</sub>Cl, followed by amination with 4-hydroxy-4-phenylpiperidine, chromatog., and salification, to give title compound II as the HCl salt. I displaced [<sup>2</sup>-125I histidyl]-neurokinin A from NK-2 receptors of rat duodenal membranes with K<sub>i</sub> = 0.50-3 nM, and antagonized NK-2 agonist-induced bronchospasm in guinea pigs.

**AN** 1992:426590 CAPLUS

**DN** 117:26590

**TI** Piperidine- and piperazine-containing arylalkylamines, process for their preparation, and pharmaceutical compositions containing them as neurokinin receptor antagonists.

**IN** Emonds-Alt, Xavier; Goulaouic, Pierre; Proietto, Vincenzo; Van Broeck, Didier

**PA** Sanofi SA, Fr.

**SO** Eur. Pat. Appl., 54 pp.

CODEN: EPXXDW

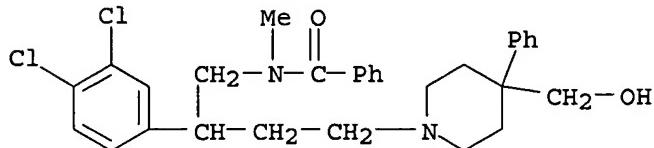
**DT** Patent

**LA** French

**FAN.CNT 1**

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 474561	A1	19920311	EP 1991-402382	19910905
	EP 474561	B1	19981209		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	FR 2666335	A1	19920306	FR 1990-11039	19900905
	FR 2666335	B1	19921211		
	FR 2678267	A1	19921231	FR 1991-7824	19910625
	FR 2678267	B1	19940204		
	IL 99320	A1	19950731	IL 1991-99320	19910827
	AU 9183542	A1	19920312	AU 1991-83542	19910903
	AU 657272	B2	19950309		
	BR 9103802	A	19920519	BR 1991-3802	19910903
	CA 2050639	AA	19920306	CA 1991-2050639	19910904

CA 2050639	C	19971202		
FI 9104174	A	19920306	FI 1991-4174	19910904
FI 98457	B	19970314		
FI 98457	C	19970625		
NO 9103469	A	19920306	NO 1991-3469	19910904
NO 177226	B	19950502		
NO 177226	C	19950809		
HU 59098	A2	19920428	HU 1991-2863	19910904
ZA 9107017	A	19921230	ZA 1991-7017	19910904
PL 167994	B1	19951230	PL 1991-291618	19910904
RU 2070196	C1	19961210	RU 1991-5001435	19910904
JP 04261155	A2	19920917	JP 1991-254730	19910905
US 5236921	A	19930817	US 1991-755454	19910905
AT 174332	E	19981215	AT 1991-402382	19910905
ES 2127722	T3	19990501	ES 1991-402382	19910905
CZ 285994	B6	19991215	CZ 1991-2724	19910905
LV 10606	B	19960420	LV 1993-139	19930225
LT 3442	B	19951025	LT 1993-585	19930531
US 5350852	A	19940927	US 1993-105677	19930813
HK 1005290	A1	20000818	HK 1998-104394	19980521
PRAI	FR 1990-11039	A	19900905	
	FR 1991-7824	A	19910625	
	US 1991-755454	A3	19910905	
OS	MARPAT 117:26590			
IT	142001-40-9P			
	RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of, as neurokinin receptor antagonist)			
RN	142001-40-9 CAPLUS			
CN	Benzamide, N-[2-(3,4-dichlorophenyl)-4-[4-(hydroxymethyl)-4-phenyl-1-piperidinyl]butyl]-N-methyl-, monohydrochloride (9CI) (CA INDEX NAME)			



● HCl

L11 ANSWER 31 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN

GI For diagram(s), see printed CA Issue.

AB The title compds. I [R = dichlorophenyl, nitrocyclohexylphenyl; X = CH:NCH:CH, CH<sub>2</sub>CH<sub>2</sub>N(C<sub>6</sub>H<sub>4</sub>OMe-o)CH<sub>2</sub>CH<sub>2</sub>, CH<sub>2</sub>CH<sub>2</sub>CR<sub>1</sub>R<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub> where R<sub>1</sub> = H, Ph, 2-chlorophenyl, 3-pyridyl, R<sub>2</sub> = H, CH<sub>2</sub>OH, CO<sub>2</sub>Et, CONH<sub>2</sub>, etc.; X<sub>1</sub> = CO, CHO, O] were prepared Thus, a mixture of 14.1 g 4-(hydroxymethyl)-4-phenylpiperidine HCl, 46.8 g 2,6-dichloroacetophenone (II), 2.75 g paraformaldehyde, and 60 mL EtOH containing 0.5 mL concentrated HCl was refluxed for

24 h., 23.5 g II and 2.75 g formaldehyde were added, and the resulting mixture was refluxed for 89 h to give 6.00 g I [R = 2,6-Cl<sub>2</sub>C<sub>6</sub>H<sub>3</sub>, X = CH<sub>2</sub>CH<sub>2</sub>CPh(CH<sub>2</sub>OH)CH<sub>2</sub>CH<sub>2</sub>, X<sub>1</sub>=CO] HCl. I had antifungal activity at 1.5625 µg/mL concentration and analgesic activity at 32-500 mg/kg in mice.

AN 1984:591709 CAPLUS

DN 101:191709  
 TI 1-(2,6-Dichlorobenzoyl)ethyl)-4-(hydroxymethyl)-4-phenylpiperidine and its  
 analogs

PA Fujisawa Pharmaceutical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 59106460	A2	19840620	JP 1982-217335	19821210
PRAI JP 1982-217335		19821210		

IT 92823-90-0P 92878-25-6P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)  
 (preparation and biol. activities of)

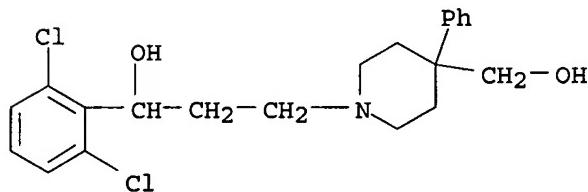
RN 92823-90-0 CAPLUS

CN 1-Piperidinopropanol,  $\alpha$ -(2,6-dichlorophenyl)-4-(hydroxymethyl)-4-phenyl-, (2E)-2-butenedioate (1:1) (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 92823-89-7

CMF C21 H25 Cl2 N O2

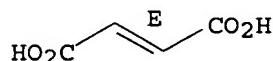


CM 2

CRN 110-17-8

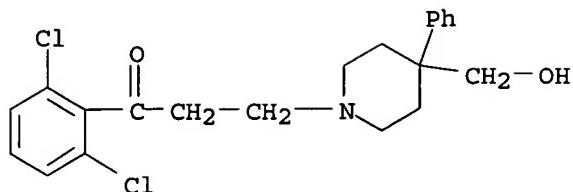
CMF C4 H4 O4

Double bond geometry as shown.



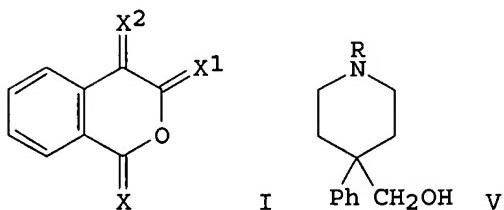
RN 92878-25-6 CAPLUS

CN 1-Propanone, 1-(2,6-dichlorophenyl)-3-[4-(hydroxymethyl)-4-phenyl-1-piperidinyl]-, hydrochloride (9CI) (CA INDEX NAME)



● HCl

L11 ANSWER 32 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
GI



AB Spiro[isochroman-3,4'-piperidin]-1-ones I [X = O, X1 = CH<sub>2</sub>CH<sub>2</sub>NRCH<sub>2</sub>CH<sub>2</sub>, X2 = H<sub>2</sub> (II); X = O, X1 = H<sub>2</sub>, X2 = CH<sub>2</sub>CH<sub>2</sub>NRCH<sub>2</sub>CH<sub>2</sub> (III); (X = X1 = H<sub>2</sub>, X2 = CH<sub>2</sub>CH<sub>2</sub>NRCH<sub>2</sub>CH<sub>2</sub> (IV) (R = Me, PhCH<sub>2</sub>, PhCH<sub>2</sub>CH<sub>2</sub>)] were prepared, e.g. from V, and their analgesic activities were determined. III, IV and V had analgesic activity at potent as aminopyrine, whereas II were inactive. Several of the compds. inhibited the histamine release induced by compound 48/80 from isolated rat peritoneal mast cells.

AN 1981:192086 CAPLUS

DN 94:192086

TI Synthesis and biological activity of spiro[isocoumarin-piperidines] and related compounds. I

AU Yamato, Masatoshi; Hashigaki, Kuniko; Ikeda, Masao; Ohtake, Hidetoshi; Tasaka, Kenji

CS Fac. Pharm. Sci., Okayama Univ., Okayama, 700, Japan

SO Chemical & Pharmaceutical Bulletin (1981), 29(2), 402-5

CODEN: CPBTAL; ISSN: 0009-2363

DT Journal

LA English

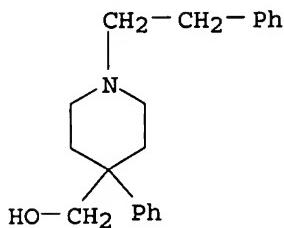
OS CASREACT 94:192086

IT 63080-12-6

RL: RCT (Reactant); RACT (Reactant or reagent)  
(analgesic and antihistaminic activities of)

RN 63080-12-6 CAPLUS

CN 4-Piperidinemethanol, 4-phenyl-1-(2-phenylethyl)- (9CI) (CA INDEX NAME)

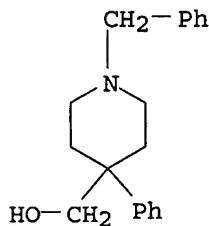
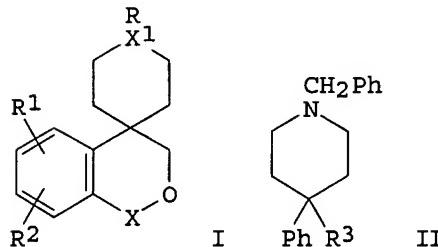


IT 59083-36-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
(cyclocondensation reaction of, with paraformaldehyde)

RN 59083-36-2 CAPLUS

CN 4-Piperidinemethanol, 4-phenyl-1-(phenylmethyl)- (9CI) (CA INDEX NAME)

L11 ANSWER 33 OF 49 CAPLUS COPYRIGHT 2006 ACS on STN  
GIAB Spiroisochromans I ( $\text{R} = \text{H}$ , alkyl, aralkyl;  $\text{R}^1$ ,  $\text{R}^2 = \text{H}$ , alkoxy, hydroxyalkyl;  $\text{X} = \text{CH}_2$ ,  $\text{CO}$ ;  $\text{X}^1 = \text{N}$ ,  $\text{CH}$ ) were prepared. Thus, methanolysis of 5.5 g II ( $\text{R}^3 = \text{CN}$ ) gave 3.3 g II ( $\text{R}^3 = \text{CO}_2\text{Me}$ ), which was reduced quant. to II ( $\text{R}^3 = \text{CH}_2\text{OH}$ ). Treating 4 g II ( $\text{R}^3 = \text{CH}_2\text{OH}$ ) with  $(\text{CH}_2\text{O})_n$ , followed by HCl gave 2.1 g I.HCl ( $\text{R} = \text{benzyl}$ ,  $\text{R}^1 = \text{R}^2 = \text{H}$ ,  $\text{X} = \text{CH}_2$ ,  $\text{X}^1 = \text{N}$ ). The latter compound showed 50% inhibition of histamine release in rats at  $6.7 \times 10^{-4}$  mol/L in vitro.

AN 1981:121329 CAPLUS

DN 94:121329

TI Spiroisochroman

PA Daiichi Seiyaku Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

## FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 55139381 JP 63006549	A2 B4	19801031 19880210	JP 1979-45167	19790413
PRAI	JP 1979-45167	A	19790413		
OS	CASREACT 94:121329				
IT	59083-36-2P			RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and cyclocondensation of, with paraformaldehyde)	
RN	59083-36-2 CAPLUS				
CN	4-Piperidinemethanol, 4-phenyl-1-(phenylmethyl)- (9CI) (CA INDEX NAME)				

